

1980

WEST FORK JARBIDGE RIVER
CHANNELIZATION EVALUATIONEvaluation Procedure

A stream survey crew of USFS and NDOW employees continued the evaluation of stream habitat and fish populations on the W. F. Jarbidge River in the channelized and associated natural areas during the week of October 27 through 30, 1980. Fewer areas were surveyed in 1980 than in 1979 due to allowable survey time and the unfortunate accident which hospitalized one crew member during the survey. Habitat measurements and population sampling were accomplished on natural and channelized areas A, E, and F.

Habitat was evaluated at 50 feet intervals using this same procedure as in the 1979 survey, but fewer measurements, 200 feet intervals, were taken in the larger channelized area A. A single pass method of fish population sampling utilizing a Smith Root VII electro-shocking unit was conducted on the entire channelized areas of A, E, and F and on 250 feet of natural A and an equal distance of channelized areas on natural areas E and F.

Results from the 1979 survey for those same areas A, E, and F (Tables IH-A and ITH-A) were extracted for the purpose of exhibiting changes and making comparison where possible.

Evaluation Results

In the 1980 survey, 12 habitat transects in the natural areas and 15 in the channelized areas revealed close similarities between the two stream habitat types.

Ratings of limiting factors slightly better in natural areas were pool quality and stream bottom with desirable materials and in channelized areas were total stream width in pools, pool-riffle ratio, bank stability, and percent habitat optimum. Substantial differences occurred in bank cover and stream environment with natural receiving much higher ratings. Spawning gravels still remain most abundant in the channelized areas, but have decreased by approximately one-half in both natural and channelized areas. Average depth and width of the stream had no noticeable changes, but some shifting in the stream course is occurring in the channelized sections. Percent sedimentation in natural areas remains higher than in the channelized areas and is showing a decreasing trend in both areas. All transects were still absent of rooted and clinging vegetation in both habitat types. Although quality pools are rare in natural areas, it is the only areas in which they occur.

In 1979 a generator electro-shocking unit was used in the population sampling. In comparison to the Smith Root VII, used in the 1980 sampling, the generator electro-shocker results in lower capture rates and has size specific limitations as determined by Coffin, "Evaluation of the Four Pass Electro-Fishing Procedure on a Small Nevada Stream", NDOW 1980. Thus, comparisons

of fish species specific to selected areas and distribution of the sampled fish population by natural and channelized areas can be determined.


Tables I through IV document the fish population status of the channelized and associated unchannelized or natural area in the West Fork Jarbidge River. Table I demonstrates the 1979 and 1980 game fish per mile by area and estimated fish populations per mile by species by area. The rainbow population was somewhat evenly dispersed in both habitat types with the populations in the channelized areas at 81% the level of that in the natural areas. Whitefish populations in the channelized areas were only 8% of the natural area population. Sculpin were found more abundant in the channelized areas with the natural area population at 51% as numerous. Dolly Varden were in low numbers in both habitat types, but did indicate a preference for natural areas. No other species of fish were contacted in the study area during the survey.

Table II is a summarization of the estimated fish per mile by station by area in 1979 and 1980 on the West Fork Jarbidge River. In 1980 the estimated fish population in channelized areas ranged from 613.0 to 1747.8 fish per mile for an average of 1233.7 fish per mile at 3 stations. Natural area populations ranged from 464.6 to 1347.3 fish per mile for an average of 983.0 fish per mile at 3 stations. Sampling accomplished with the Smith Root VII electro-shocker in 1980 resulted in much higher fish per mile estimates than recorded in 1979 and does not support the indication of an increasing fish population. In 1980 more fish were contacted in the channelized areas as opposed to the majority in natural areas in 1979. Based on fish number per mile of the sampled populations at stations A, E, and F, in 1979, 82% were occupying natural areas and 18% in channelized areas and respectively 44% and 56% in 1980. This represents a distributional shift of 38% into the channelized areas.

Rainbow and sculpin were contacted in all areas sampled in the 1980 survey, but only sculpin were found in all of the same areas in 1979. Rainbow were discovered to have additionally inhabited channelized areas E and F which were unoccupied by this species in 1979. Mountain whitefish were found in channelized area A both years and in natural area F in 1980. The low population of Dolly Varden exhibited inconsistent distribution from one year to the next.

Tables III and IV provide basic summary data for the natural and channelized stream shocking transects A, E, and F for all fish sampled during the 1980 survey.

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WEST FORK JARBIDGE RIVER
FISH POPULATION SURVEY HISOTRY

Table I

Date	# Samples	Game Fish/Mile Estimates	Average Fish Per Mile Estimates By Species + (No. Transects Species Occurred)				Comments
			Rainbow	White Fish	Sculpin	Dolly Varden	
10/26/79	5 Chan.	26.12,	33.8 (2)	37.2 (3)	84.9 (4)	7.3 (1)	Electro shocked with generator.
10/26/79	5 Unchan.	174.93	507.6 (5)	12.99 (2)	216.8 (5)	4.2 (1)	Electro shocked with generator.
10/28/80	3 Chan.	132.66	383.4 (3)	11.7 (1)	850.2 (3)	2.9 (1)	Electro shocked with Smith Root VII.
10/28/80	3 Unchan.	233.03	472.2 (3)	145.7 (1)	435 (3)	81.2 (1)	Electro shocked with Smith Root VII.

Table II

WEST FORK JARBIDGE RIVER
FISH PER MILE BY STATION

Year	Stations	A	B	E	F	G	Comments
1979	Channelized	100.9	79.5	121.8	218.5	295.3	Electro shocked with generator.
1979	Unchannelized	485.7	1017.8	203.0	1347.3	760.3	Electro shocked with generator.
1980	Channelized	613.0	*	1340.3	1747.8	*	Electro shocked with Smith Root VII.
1980	Unchannelized	464.6	*	1137.2	1347.3	*	Electro shockes with Smith Root VII.

* Not sampled in 1980.